The new substrate is synthetically easily accessible

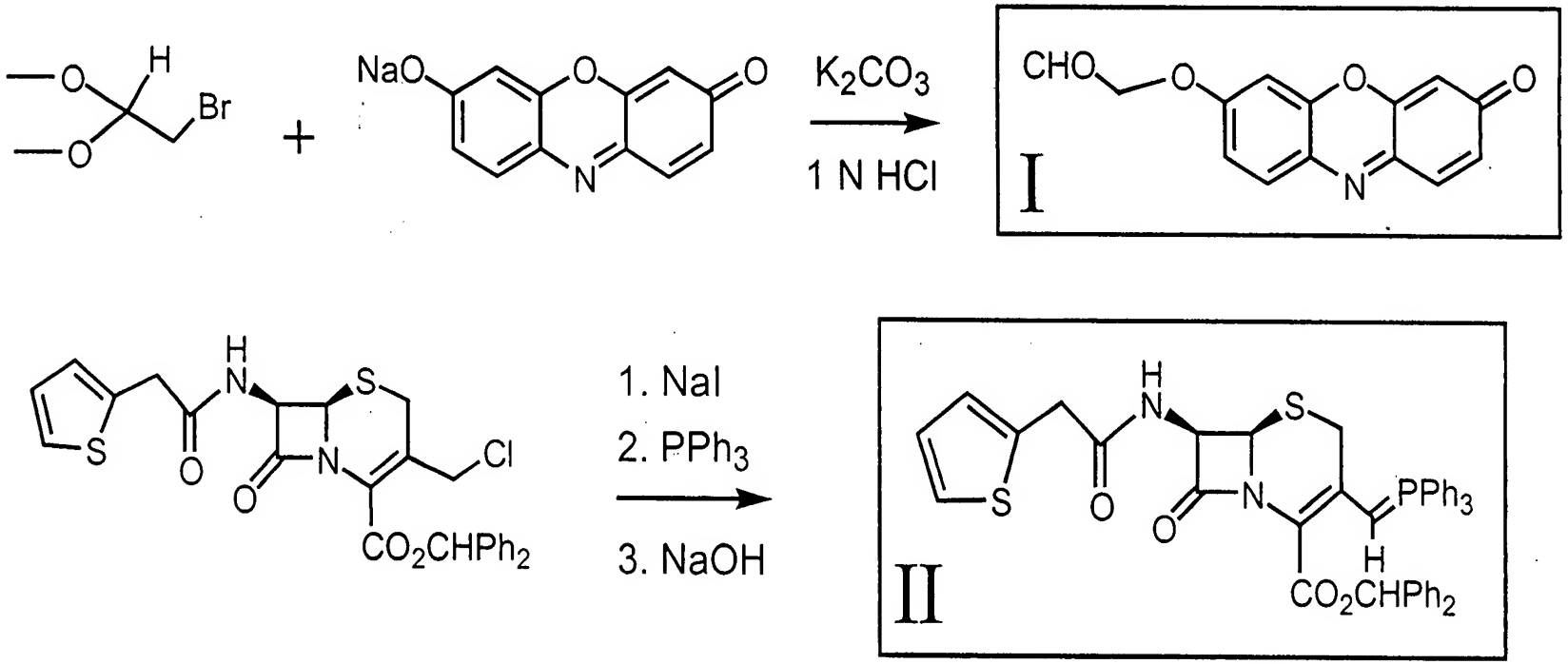
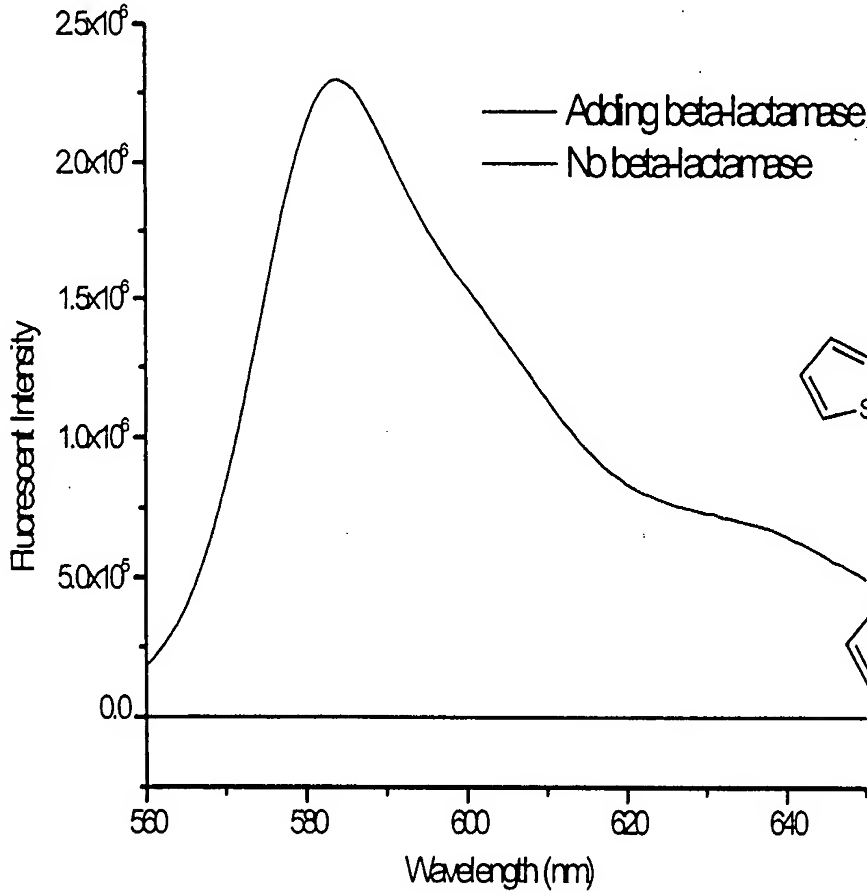


FIG. 1

Enzymatic fragmentation can take place to the new substrate



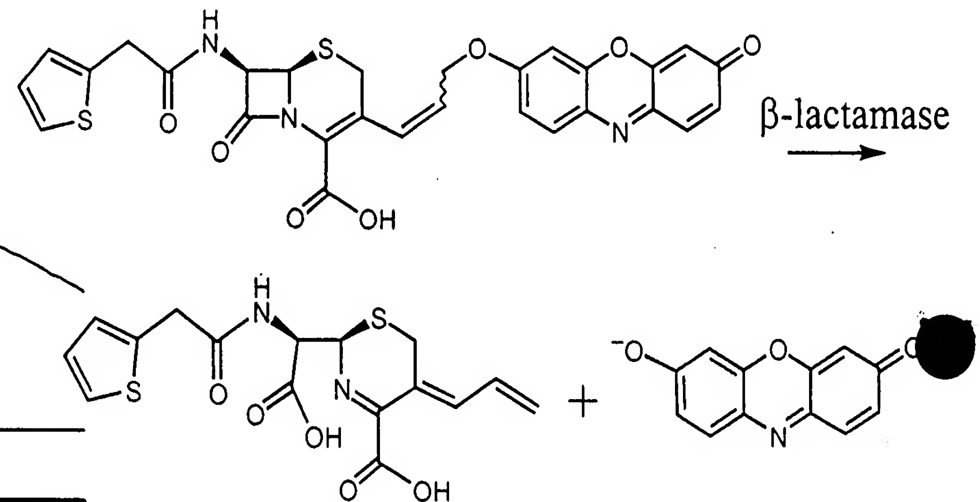


FIG. 2

Synthesis of RECTO

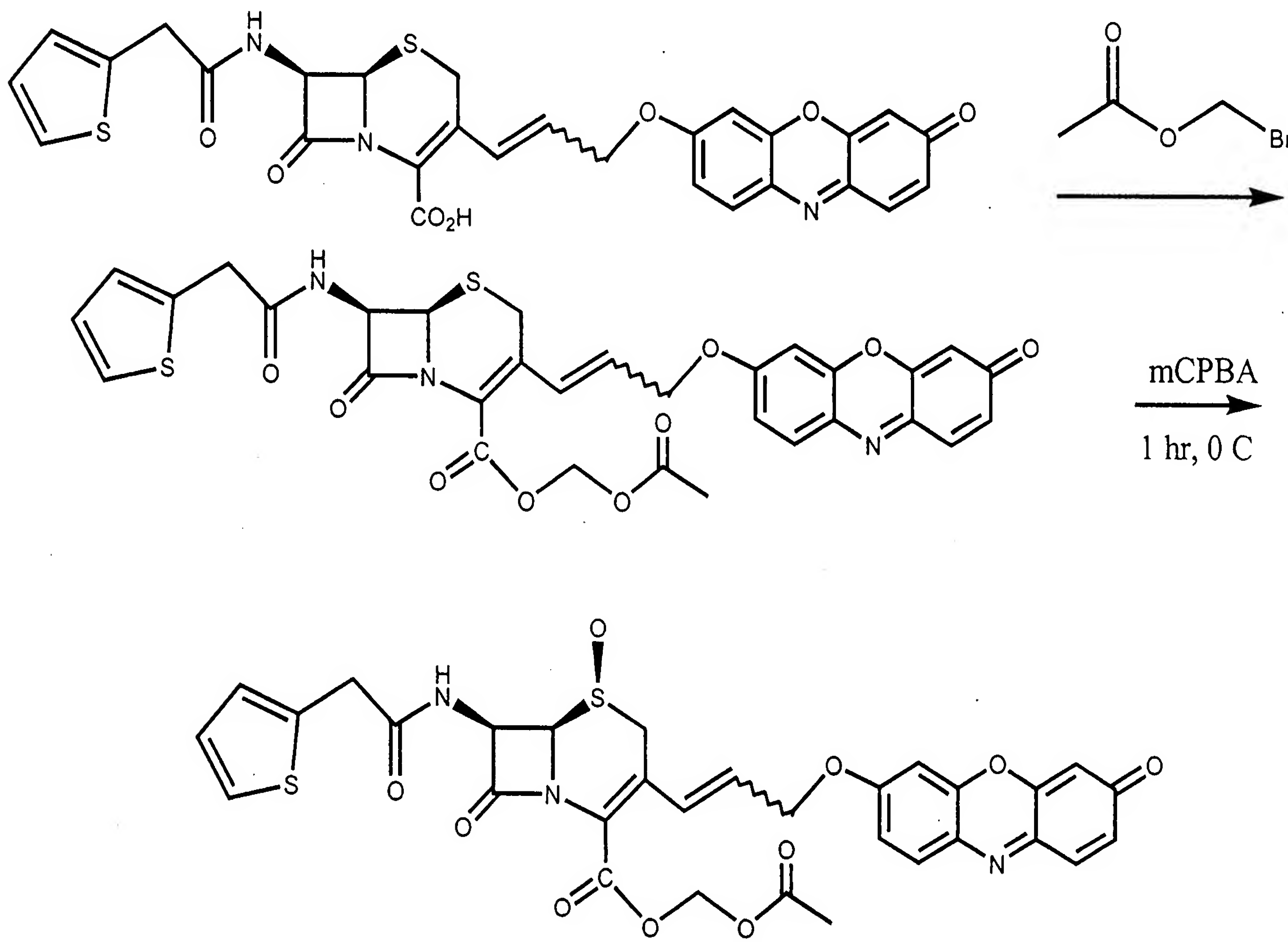


FIG. 3

Oxidation state of the sulfide affects stability of the substrate

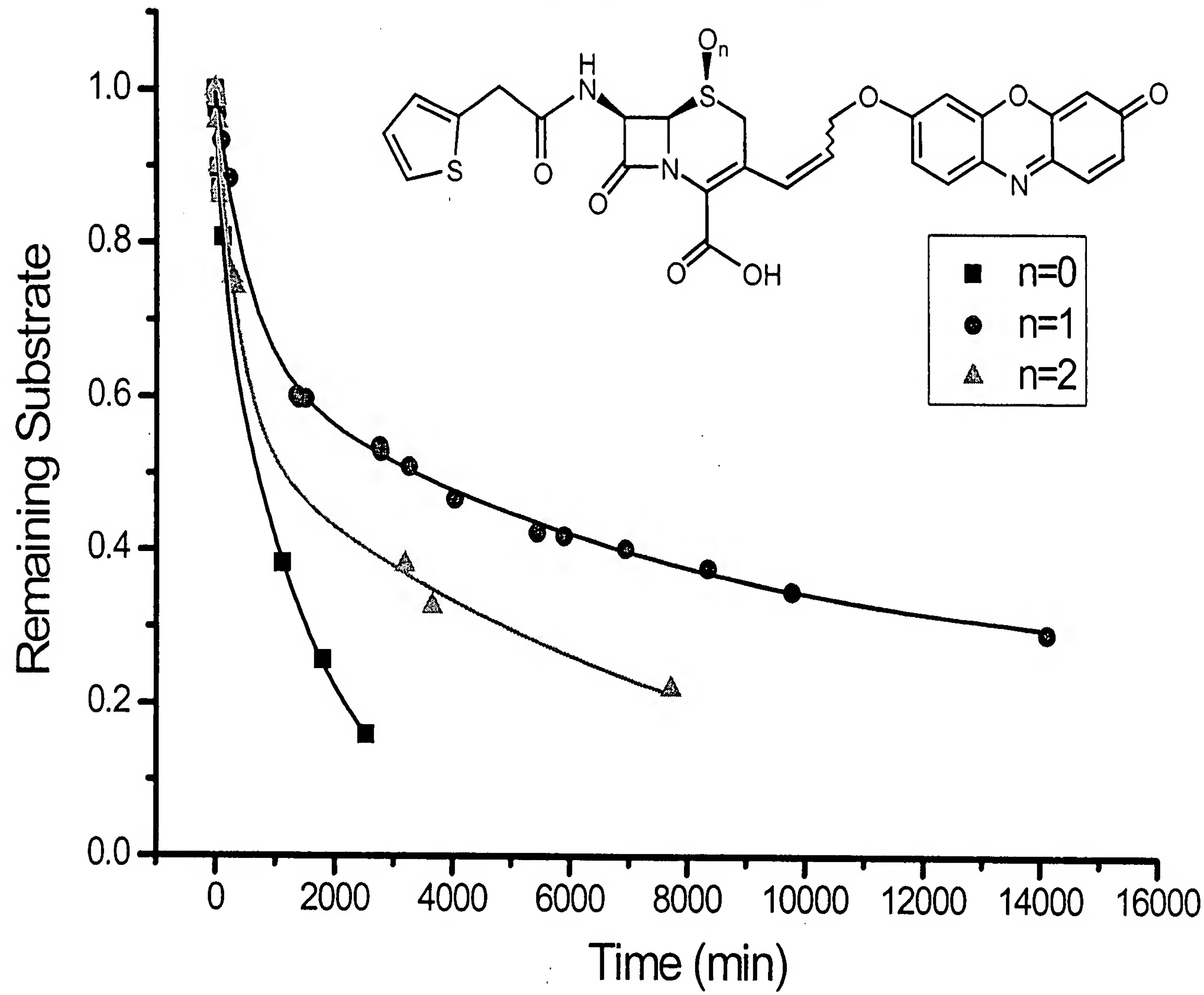


FIG. 4

Sulfoxide increases substrate stability

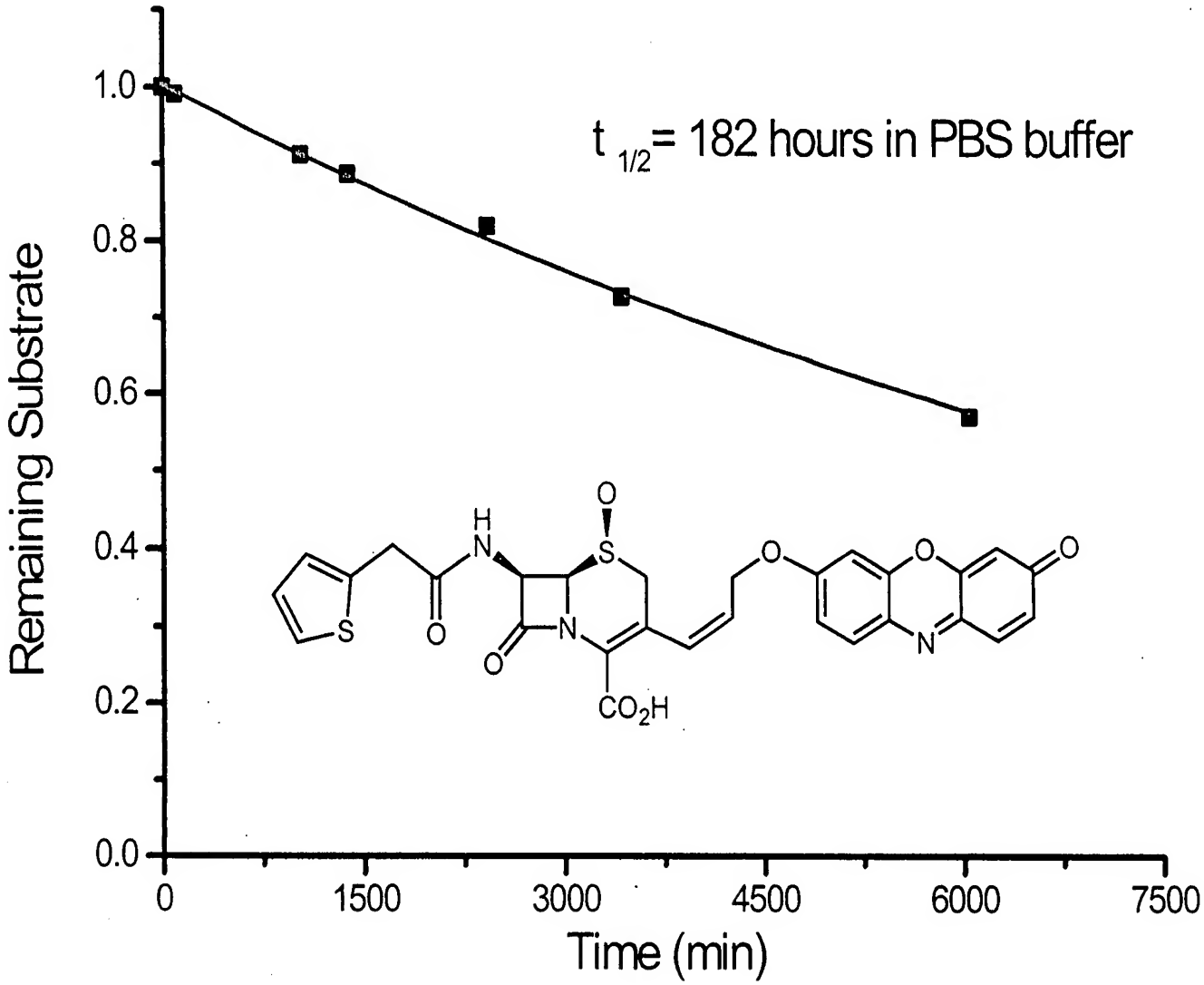
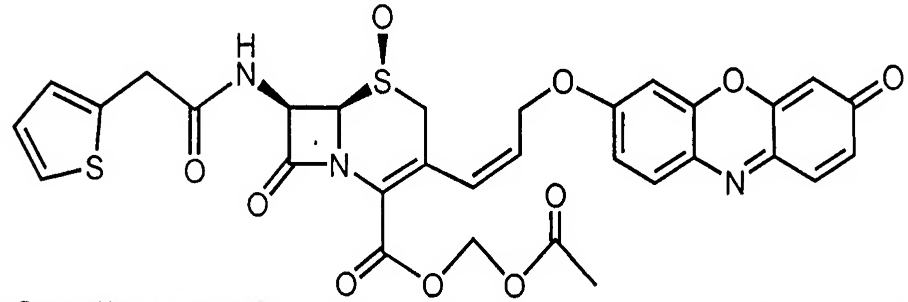
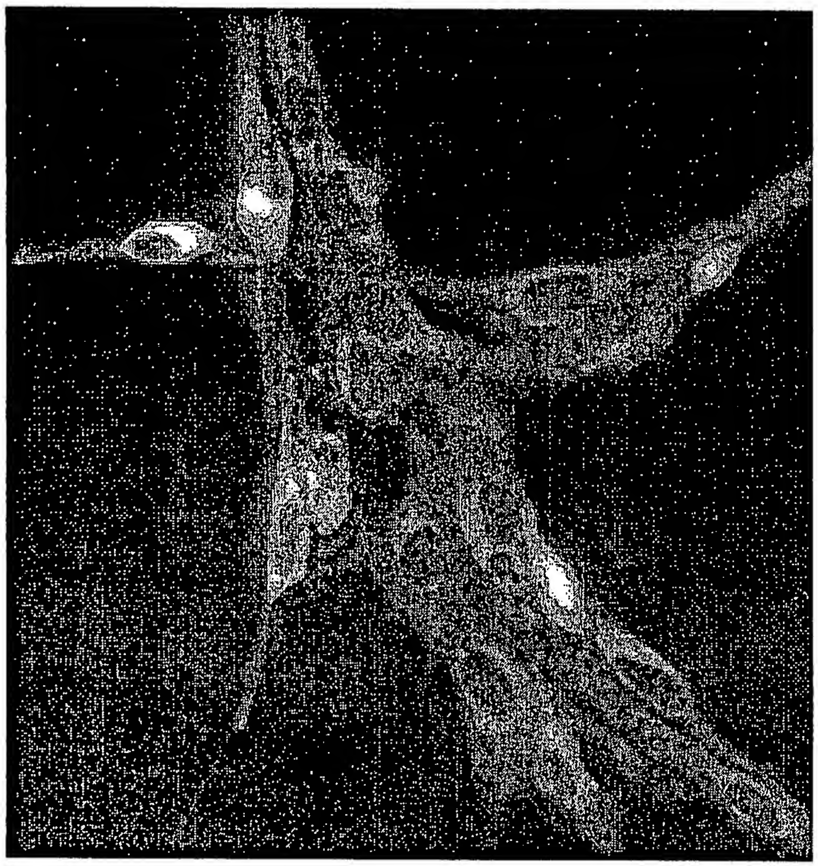


FIG. 5

Increased resorufin deposition in β-lactamase-transfected vs. wild type cells



BLA-transfected C6 glioma cells



WT C6 glioma

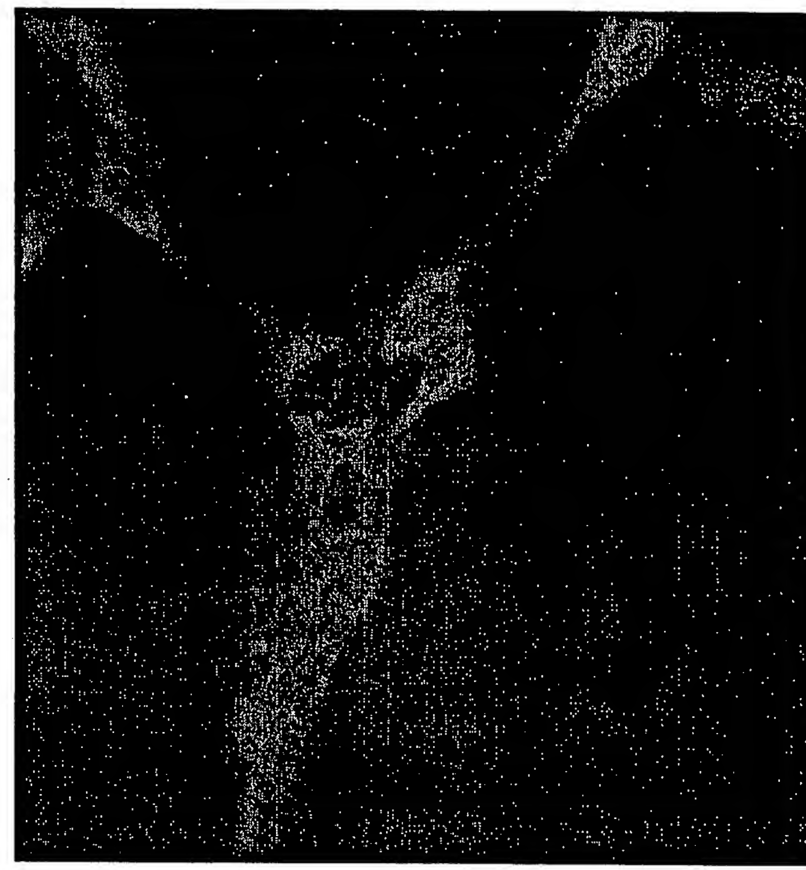
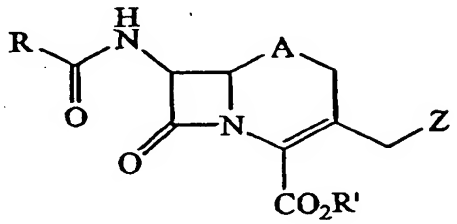


FIG. 6

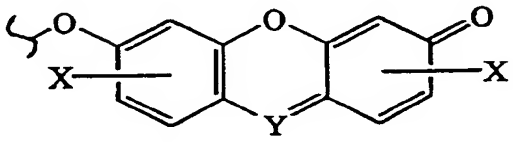
cephalosporin-phenol ethers that we wish to claim:



Preferred R = benzyl, 2-thienylmethyl, or cyanomethyl; A = S or SO; R' = H or physiologically acceptable salts or ester groups.

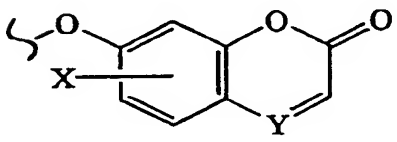
where Z can be:

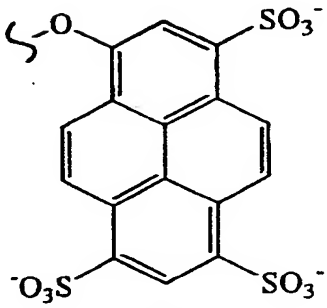
(I)



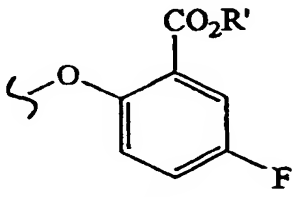
where X = H, F, Cl, Br, CO_2R'; Y = N, CH, C-CN, C-CF_3

(II)

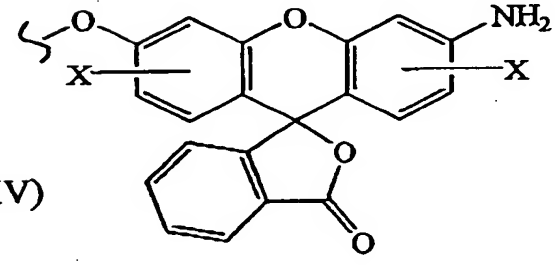




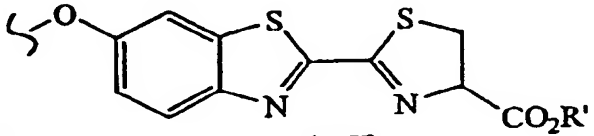
(III)



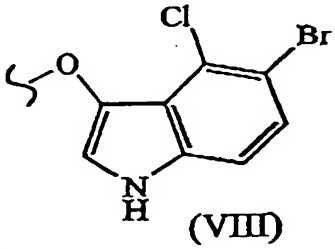
(V)



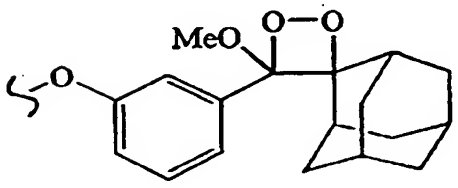
(IV)



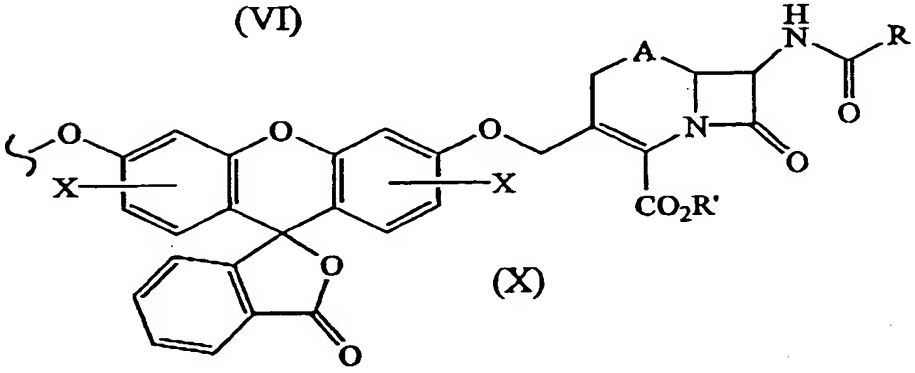
(VII)



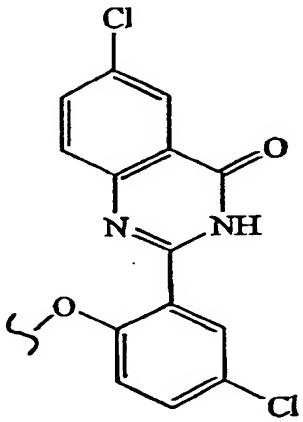
(VIII)



(VI)



(X)



(IX)

FIG. 7

Resorufin-cephalosporin cleaved by β-lactamase

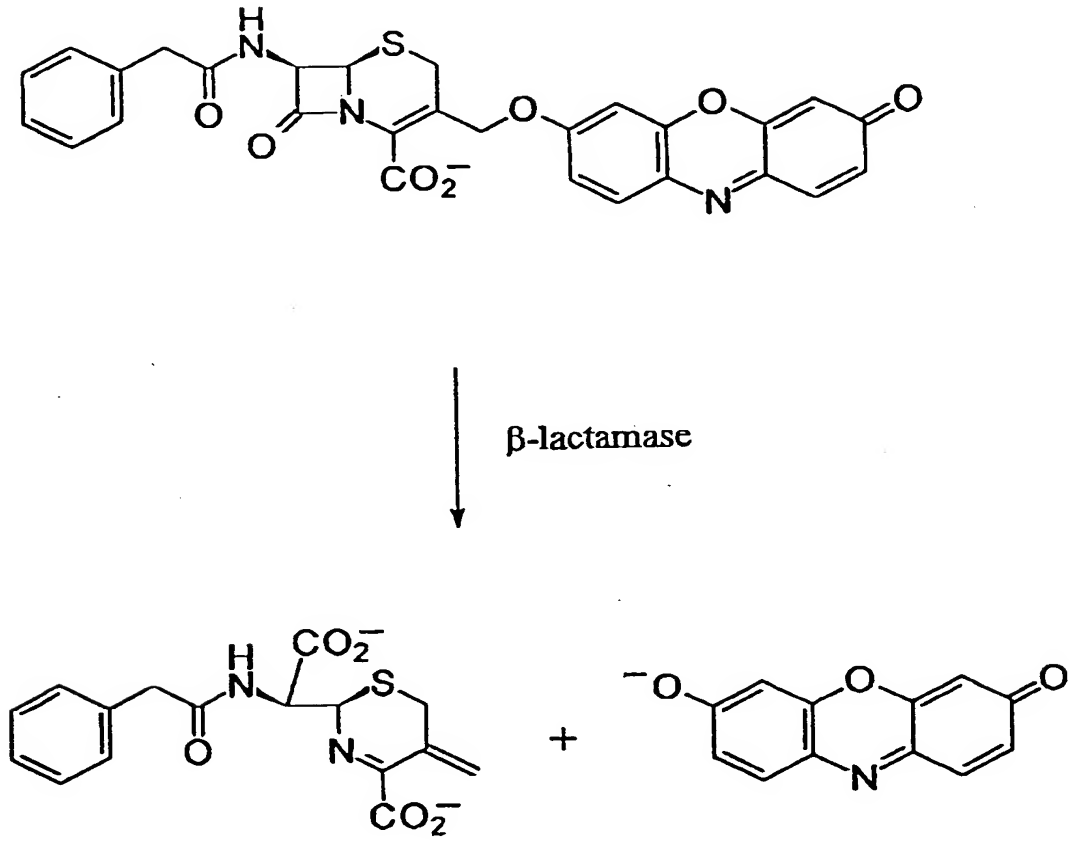


FIG. 8

Absorption spectra of resorufin-cephalosporin before and after β-lactamase treatment

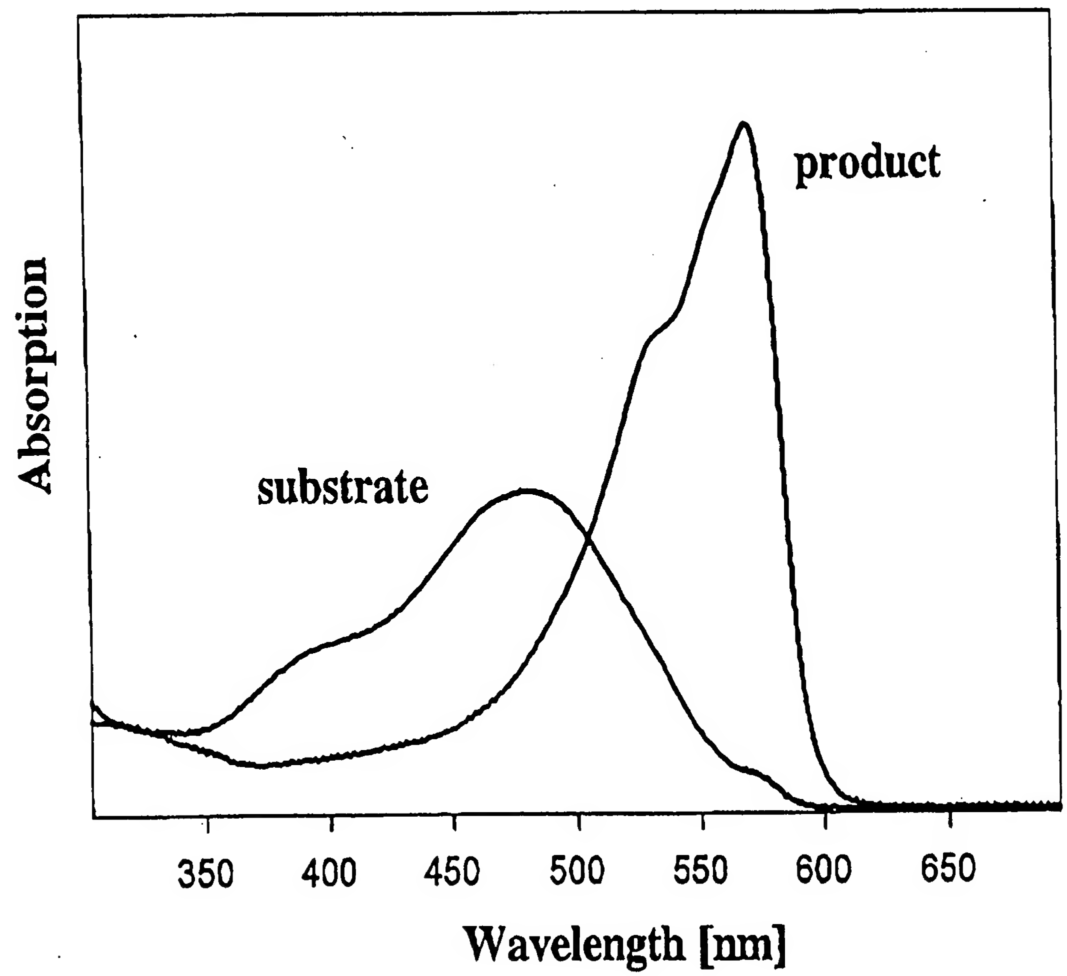


FIG. 9

Fluorescence emission of resorufin-cephalosporin before and after β-lactamase treatment

(excitation at 570 nm)

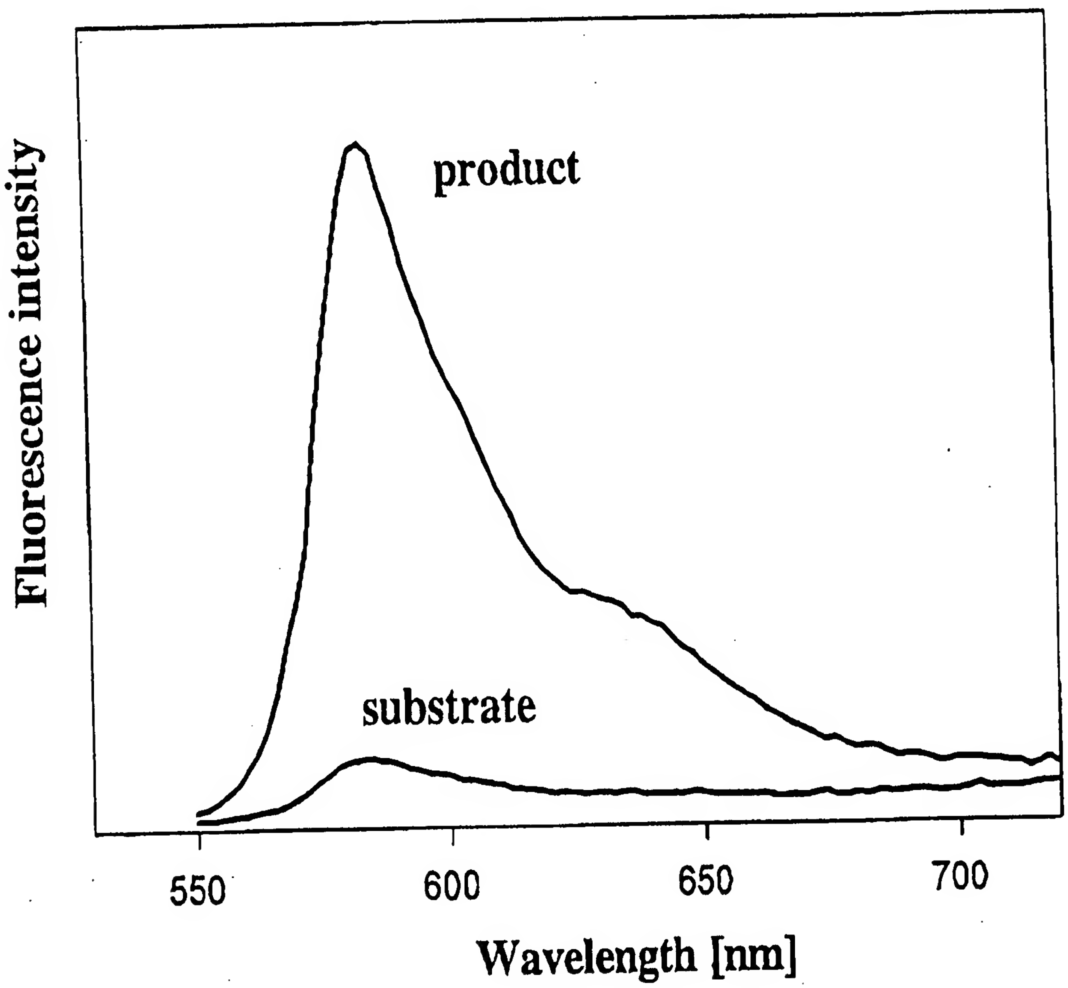


FIG. 10